

State of Louisiana



Department of Environmental Quality

M. J. "MIKE" FOSTER, JR. GOVERNOR

L. HALL BOHLINGER SECRETARY

Certified Mail No. 7002 2030 0002 8909 2392

Mr. John C. Ponticello Refinery Manager ConocoPhillips Company P.O. Box 176 Belle Chasse, Louisiana 70037

RE: PSD-LA-696, Clean Fuel Project, Alliance Refinery, ConocoPhillips Company, Belle Chasse, Plaquemines Parish, Louisiana, Agency Interest (AI) No. 2418

Dear Mr. Ponticello:

Enclosed is your permit, PSD-LA-696. Construction of the proposed project is not allowed until such time as the corresponding Part 70 operating permit or construction authorization is approved.

Should you have any questions concerning the permit, contact Syed Quadri at (225)765-0500.

Sincerely,

Zinda Korn Levy Assistant Secretary

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SGQ

c: Southeast Regional Office, US EPA Region VI





AUTHORIZATION TO OPERATE A NEW OR MODIFIED FACILITY PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS IN LOUISIANA ENVIRONMENTAL QUALITY ACT, LAC 33:III.509

In accordance with the provisions of the Louisiana Environmental Quality Act, LAC 33:III.509,

ConocoPhillips Company Alliance Refinery P.O. Box 176 Belle Chasse, Louisiana 70037

is authorized to modify and operate the Alliance Refinery, in

Belle Chasse Plaquemines Parish, Louisiana

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

This permit and authorization to construct shall expire at midnight on 3rd of April , 2005, unless physical on site construction has begun by such date, or binding agreements or contractual obligations to undertake a program of construction of the source are entered into by such date.

Signed this 3rd day of Other, 2003.

THAT WY

/Linda Korn Levy Assistant Secretary

Louisiana Department of Environmental Quality

ALLIANCE REFINERY CONOCOPHILLIPS COMPANY AGENCY INTEREST NO. 2418 BELLE CHASSE, PLAQUEMINES PARISH, LOUISIANA PSD-LA-696

PURPOSE

As part of the Clean Fuels Project, ConocoPhillips proposes construct а charge heater, а reboiler, intermediate gasoline storage tanks, and piping fugitive components associated with the construction of the new equipment. ConocoPhillips also proposes to increase steam production from the existing boilers, increase the existing cooling tower circulation rate, increase sulfur production at the Sulfur Recovery Units, and increase the wastewater throughput at the Wastewater Treatment Unit. The Clean Fuels Project is proposed by ConocoPhillips in order to comply with the Tier 2 Motor Vehicle Emission Standards and Gasoline Sulfur Control Requirements promulgated by the United States Environmental Protection Agency.

RECOMMENDATION

Approval of the proposed construction and issuance of a permit.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Permits Division.

PROJECT DESCRIPTION

ConocoPhillips Company proposes the Clean Fuels Project to produce low sulfur gasoline with sulfur content less than 30 parts per million (ppm). This project is being undertaken to come in compliance with the recent promulgated final rule titled "Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emission Standards and Gasoline Sulfur Control Requirements" (Tier 2 Rule). This rule mandates a reduction in sulfur content in gasoline.

Full range Fluid Catalytic Cracking Unit gasoline will be treated to reduce the sulfur content through the installation of additional hydrotreating equipment consisting of reactors, heaters, a compressor, an amine

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contactor, and a gasoline stabilizer.

Total emission increases from the project (plant wide) in tons per year are as follows:

	Project	PSD De	PSD Review
Pollutant	Increase	Minimis	Required
PM/PM ₁₀	14.32	25/15	NO
SO ₂	46.84	40	YES
NOx	· 86.29	40	YES
CO	75.43	100	NO
VOC	77.81	40	YES
H ₂ S	0.75	10	NO
H ₂ SO ₄	0.57	7	NO

The increases in NO_X , SO_2 , and VOC emissions are above the significance levels and must undergo PSD review. PSD review is not required for PM/PM₁₀, CO, H₂S, and H₂SO₄ as the net increase is below the significance threshold. Netting analysis indicated that the facility would not net out for NO_X , SO_2 , and VOC emissions.

TYPE OF REVIEW

 $NO_{\rm X}$, $SO_{\rm 2}$, and VOC emissions from the proposed project are above PSD significance levels. Therefore, the requested permit was reviewed in accordance with PSD regulations for these pollutants.

BEST AVAILABLE CONTROL TECHNOLOGY

The selection of best available control technology for NO_x , SO_2 , and VOC emissions was based on using a "top-down" approach, and included consideration of control of toxic air pollutants.

Best available control technology (BACT) analysis is required for the emission units that are physically modified or are new and emit pollutants that require PSD review. In this case, BACT is required for the feed heater, Emission Point 294-H-1, reboiler, Emission Point 294-H-2, storage tanks, Emission Points 294-T-1, 294-T-2, 294-T-3,

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and fugitive emissions, Emission Point 294-FF. Other affected emission sources are not being physically modified; therefore, BACT analysis is not required.

Ultra Low NO_X burners were determined as BACT for NO_X emissions and a limit of 0.1 gr/dscf of H_2S in the fuel gas based on NSPS, Subpart J requirements for SO_2 emissions for the feed heater and the reboiler. Compliance with the leak detection and repair (LDAR) program as per the requirements of LA MACT for Refineries was determined as BACT for VOC emissions from fugitive components. External floating roof (EFR) was determined as BACT for VOC emissions from storage tanks.

AIR QUALITY IMPACT ANALYSIS

Prevention of Significant Deterioration (PSD) regulations require an analysis of existing air quality for those pollutants emitted in significant amounts from a proposed modification or new facility. The Clean Fuels (CF) Project complies with Federal PSD requirements for Nitrogen Dioxides (NO2), Sulfur Dioxide (SO2), and Volatile Organic Compounds (VOC). The National Ambient Air Quality Standards (NAAQS) and PSD Increment models demonstrated that facility-wide emissions of NOx and SO2, including offsite sources and background data, are below the NAAQS and PSD Increment standards. The Louisiana Department of Environmental Quality (LDEQ) approved existing ambient monitors as a surrogate to additional monitoring for SO2 and ozone; therefore, the CF Project does not require any pre-construction or post-construction additional monitoring. To quantify the VOC ambient impact (ozone formation) of the proposed project, the Alliance Refinery performed a Scheffe screening analysis for ozone that predicted compliance with ozone ambient standards.

ADDITIONAL IMPACTS

The CF Project complies with PSD requirements. The proposed project will not lead to a significant growth increase in Plaquemines Parish. The proposed project will not impair visibility, soils, or vegetation in Plaquemines

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Parish. The Federal Land Manager (FLM) stated that the CF Project does not require any Class I area analyses (deposition, ozone, or visibility). It is estimated that 2 permanent jobs will be created.

PROCESSING TIME

Application Dated: February 3, 2003
Application Received: February 5, 2003
Effective Completeness: May 28, 2003

PUBLIC NOTICE

A notice requesting public comment on the permit was published in The Advocate, Baton Rouge, Louisiana, on August 15, 2003, and The Plaquemines Gazette, Belle Chasse, Louisiana, on August 15, 2003. No written or oral comments were received from the general public and organizations. Copies of the public notice were mailed out to individuals on the mailing list maintained by the Office of Environmental Services on August 18, 2003. The proposed permit was also submitted to US EPA Region VI (via email).

ALLIANCE REFINERY

CONOCOPHILLIPS COMPANY

AGENCY INTEREST NO. 2418

BELLE CHASSE, PLAQUEMINES PARISH, LOUISIANA

PSD-LA-696

MAY 28, 2003

I. APPLICANT

ConocoPhillips Company Alliance Refinery P.O. Box 176 Belle Chasse, Louisiana 70037

II. LOCATION

ConocoPhillips Company owns and operates a petroleum refinery located in Belle Chasse, Louisiana. The adjoining property to the north of the ConocoPhillips-Alliance Refinery is owned by British Petroleum (BP). Adjoining properties to the south are owned by Mississippi River Grain Elevator, MISSALCO, and Louisiana Citrus Lands, Inc. and are used for a grain elevator and alcohol plant, and pasture lands, respectively. The refinery is bounded by the Mississippi River to the east and Highway 23 to the west. Property west of Highway 23 is owned by Tosco and BP. This property is used as pasture land. Approximate UTM coordinates are 211.520 Kilometers East and 3287.014 Kilometers North, Zone 16.

III. PROJECT DESCRIPTION

ConocoPhillips Company proposes the Clean Fuels Project to produce low sulfur gasoline with sulfur content less than 30 parts per million (ppm). This project is being undertaken to come in compliance with the recent promulgated final rule titled "Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emission Standards and Gasoline Sulfur Control Requirements" (Tier 2 Rule). This rule mandates a reduction in sulfur content in gasoline.

Full range Fluid Catalytic Cracking Unit gasoline will be treated to reduce the sulfur content through the installation of additional hydrotreating equipment consisting of reactors, heaters, a compressor, an amine contactor, and a gasoline stabilizer.

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To comply with the Tier 2 Rule requirements, ConocoPhillips will undertake the following modifications:

- 1. Install a new charge heater, 115.1 MM BTU/hr;
- 2. Install a new reboiler, 90.73 MM BTU/hr;
- 3. Construct three new intermediate gasoline storage tanks;
- 4. Install associated piping and fugitive components as required;
- 5. Increase steam production from the existing boilers;
- 6. Increase existing cooling tower circulation rate;
- 7. Increase sulfur production at the Sulfur Recovery Units;
- 8. Increase the wastewater throughput at the Wastewater Treatment Unit.

The Clean Fuels Project will increase emissions from the refinery because of the addition of new emission sources and the incremental operation rate increase for existing sources. Alliance Refinery shall submit applications to modify existing wastewater permit, Unit No. 308W, and cooling water tower permit, Unit No. 303. Other affected units, Unit Nos. 301 and 591/592, will not increase emissions from the current permit limit. ConocoPhillips will apply for all the changes permitted in this permit before the project is commissioned.

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	Project	PSD De	Netting
Pollutant	Increase	Minimis	Required
PM/PM ₁₀	14.32	25/15	NO
SO ₂	46.84	40	YES
NO_X	86.29	40	YES
CO	75.43	100	МО
VOC	77.81	40	YES
H ₂ S	0.75	10	NO
H ₂ SO ₄	0.57	7	NO

The increase in NO_X , SO_2 , and VOC emissions are above the PSD significance levels and must undergo PSD review. Netting analysis indicated that the facility would not net out for NO_X , SO_2 , and VOC emissions. The selection of best available control technology for NO_X , SO_2 , and VOC emissions was based on using "top-down" approach, and included consideration of control of toxic air pollutants.

Permitted emissions from the Clean Fuels Project in this permit in tons per year are as follows:

POLLUTANT	EMISSION RATE
$\overline{PM/PM_{10}}$	6.72
SO ₂	24.25
NO_X	36.07
CO	74.25
VOC	48.05

IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels from modified major sources requires review under Prevention of Significant Deterioration regulations, 40 CFR 52.21.

PSD permit reviews of proposed new or modified major stationary sources require the following analyses:

A. A determination of the Best Available Control Technology (BACT);

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- A. A determination of the Best Available Control Technology (BACT);
- B. Analysis of the existing air quality and determination of whether or not preconstruction or post construction monitoring will be required;
- C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);
- D. An analysis of the PSD increment consumption;
- E. An analysis of the source related growth impacts;
- F. An analysis of source related impacts on soils, vegetation, and visibility;
- G. A class I area impact analysis; and
- H. An analysis of the impact of toxic compound emissions.

A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top-down" BACT is required for the control of each regulated pollutant emitted from a new or modified source in excess of the specified significant emission rates. The top-down BACT approach starts with the most stringent (or top) technology that has been applied to the same unit at other similar emissions source types and provides a basis for rejecting it in favor of the next most stringent technology, on the basis of feasibility (based on technical, environmental, energy, and/or cost considerations), or proposing it as BACT.

 NO_{x} , SO_{2} , and VOC emissions from this project will be above PSD significance levels. A BACT analysis is required for PSD regulated pollutants emitted in significant amounts from the project.

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BACT Analysis for NO_x

Control techniques for NO_x emissions include ultra-low NO_x burners (ULNB), selective catalytic reduction (SCR), selective noncatalytic reductions (SNCR), and SCONO_x.

The $SCONO_x^m$ system is an emerging technology that offers the potential of providing a NO_x emissions limit of 2 to 3 ppmvd. The $SCONO_x^m$ system utilizes a catalyst to reduce NO_x and CO emissions. NO_x and CO are adsorbed onto the catalyst surface. The catalyst is periodically regenerated using an inert gas; therefore, a section of catalyst is always available for the adsorption of NO_x . The $SCONO_x^m$ system operates at temperatures ranging from $300^{\circ}F$ to $700^{\circ}F$.

While $SCONO_x^{rm}$ is a promising technology; it has yet to be commercially demonstrated on a process furnace. The only commercially successful applications of $SCONO_x^{rm}$ have been on gas turbines. At the time BACT research was conducted for this permit application, only two known commercial gas turbine installations were in operation (December 1999 press release from Coal Line Environmental Technologies, a $SCONO_x^{rm}$ supplier).

Because $SCONO_x^m$ has not been successfully demonstrated on process heaters and boilers; it is considered not technically feasible. Based on technical infeasibility, $SCONO_x^m$ is rejected as BACT for NO_x emissions from the process heaters.

The top technically feasible NO_x control alternative considered for the process heaters is SCR. SCR is a post-combustion gas treatment technique that reduces NO_x to molecular nitrogen, water, and oxygen. The SCR process utilizes aqueous or anhydrous ammonia (NH₃) as a reducing agent. The NH₃ is injected into the heater flue gas upstream of the SCR catalyst bed. The catalyst lowers the activation energy of the NO_x reduction reaction. Depending on the overall molar NH_3 -to- NO_x ratio, control efficiencies for NO_x greater than 90% may be achieved. There are at least

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two ideal SCR operating temperature ranges depending on what SCR catalyst is used. The temperature range for "standard temperature" SCR is 600°F - 800°F. The temperature range for "low temperature" SCR is 300°F - 500°F. For these process furnaces and reboilers, the SCR would be installed at the stack where the flue gas temperature is approximately 300°F; therefore, the "low temperature" SCR catalyst will be considered.

The technical, economic, and environmental difficulties associated with SCR are as follows:

- An SCR catalyst requires a narrow window of acceptable system inlet temperatures. Operation below the minimum acceptable temperature prevents the desired catalytic reaction. Operation above the maximum acceptable temperature results in poor NO_x reduction performance and oxidation of ammonia to NO_x.
- There are notable environmental hazards associated with using ammonia to operate SCR. SCR applications generally operate with a molar NH_3 -to- NO_x ratio greater than that required by the stoichiometry of the reduction reaction to achieve optimal conversion efficiencies. This results in the emission of toxic and odorous ammonia into the atmosphere (i.e. "ammonia slip"). Moreover, SCR has significant safety considerations associated with the transportation, storage, and handling of large amounts of ammonia.
- The cost per ton of an SCR installation is typically very high for a single process heater. The first cost analysis is based on the emissions reductions that would result from installing SCR on conventional burners. Based on the BACT cost analysis, SCR has a cost effectiveness of \$9,000 to \$11,000 per ton for the two heaters. The

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total installed SCR cost and operating costs are based on vendor data and recent experience with SCR designs on similar units.

However, the baseline NO_x emissions are more accurately reflected using NO_x emissions resulting from Ultra Low NO_x burners. The burners typically being installed in new process heaters and process heater retrofits are ULNBs, which is now the standard burner technology. "Conventional burner" technology has become obsolete, since the incremental cost for the additional control is small, when considering the overall project cost. Using current standard burner technology as a baseline, the cost effectiveness of an SCR installation for these heaters is estimated to be at least \$22,000 per ton of NO_x reduced annually.

Based on the technical, environmental, and economic impacts of implementing an SCR system for the process heaters, SCR is rejected as BACT.

The SNCR process includes direct injection of NOx reducing chemicals (such as urea or ammonia) into the flue gas of the process heater/reboiler to reduce NO_x emissions to N_2 . The documented average NO_x reduction, based on previous process experience, is in the range of 40% to 60% (EPA-453/R-93-034). To operate SNCR, the ammonia injection must occur where the flue gas temperature is in the range of 1600°F to 2100°F. Significant NO_x control requires a residence time at these temperatures of at least 0.5 seconds. Typically, for the SNCR process, ammonia is injected either in the furnace firebox or convection If the injection occurs above the specified temperature range, the NO_{\varkappa} emissions will increase rather than be reduced. If the injection occurs below the specified temperature range, then the ammonia emissions will increase. In addition, these applications, where they are feasible, have proven to be difficult to control and

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may result in substantial emissions of ammonia during control swings.

Process heaters cannot provide the flue gas temperatures of 1600°F to 2100° for a sufficient residence time. Therefore, SNCR is not technically feasible from a temperature perspective. Based on technical infeasibility, SNCR is rejected as BACT.

Ultra Low NO_x Burners (ULNBs) use staged combustion principles similar to Low NO_x Burners (LNBs), but also have special designs that facilitate internal flue gas recirculation (FGR). ULNBs provide lower NO_x emission rates than are achieved using Low NO_x Burners. Internal FGR introduces a relatively cool, inert stream into the combustion zones where thermal NO_x formation is favored. Introduction of this inert stream lowers the concentration of both fuel and oxygen in the combustion zone and thus lowers the reaction rate and spreads out the flame (lowering peak temperatures). BACT for NO_x emissions from the proposed process heaters is the use of ULNBs with internal Flue Gas Recirculation. These burners will provide a 0.04 lb NO_x/MM BTU (HHV) BACT NO_x limit.

BACT Analysis for VOC

VOC emissions from the heaters are primarily a result of the incomplete combustion of refinery fuel gas. Heaters are normally operated to achieve high combustion efficiencies resulting in minimized VOC emissions. Subsequently, well-controlled combustion results in low VOC emission rates.

The heater fuel will be refinery fuel gas; therefore, VOC emissions will be minimal. Unburned hydrocarbons in the heater exhaust will be predominantly methane. A review of the EPA's RBLC indicated that the VOC control strategy for heaters has been good combustion practices. Based on previous BACT demonstrations and minimal VOC emissions from

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the heaters, BACT for VOC emissions is proposed as good combustion practices and good engineering design.

There are new fugitive components (valves, connectors, pumps, etc.) being installed as part of the Clean Fuels Project. These components will be incorporated into the existing fugitive LDAR program at the Alliance Refinery. The LDAR program is the primary method that refineries have been utilizing to minimize VOC emissions from fugitive leaks and is regarded by EPA and LDEQ as the top VOC control technology. The Alliance Refinery LDAR program, which meets or exceeds Louisiana Refinery Maximum Achievable Control Technology (MACT), will serve as BACT to minimize emissions of VOC from the new fugitive components.

All of the new storage tanks are subject to NESHAP Subpart CC (MACT) and NSPS Subpart Kb. External floating roof tanks with primary and secondary seals will be used to demonstrate compliance with the aforementioned regulations. The external floating roof design is considered one of the top VOC control technologies for storage tanks. Compliance with NSPS Subpart Kb and NESHAP CC control requirements via use of external floating roof design is determined as BACT for VOC emissions from the gasoline storage tanks.

BACT Analysis for SO₂

A search of the EPA's BACT/LAER Clearinghouse did not indicate control technologies other than good combustion practices and use of low sulfur fuels for SO_2 emissions. SO_2 emissions are generated from the combustion of H_2S and other reduced sulfur compounds present in the fuels that will be fired.

These furnaces will comply with the provisions of NSPS Subpart J, which require the use of low sulfur fuels. For the proposed furnaces, complying with Subpart J and burning low sulfur fuels is determined as BACT.

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PSD-LA-696

MAY 28, 2003

B. ANALYSIS OF EXISTING AIR QUALITY

PSD Regulations require an analysis of existing air quality for those pollutant emissions which increase significantly from a proposed major source. $NO_{\rm x}$, VOC, and SO_2 are pollutants of concern in this case. The Clean Fuels (CF) Project complies with Federal PSD requirements for Nitrogen Dioxides (NO_2), Sulfur Dioxide (SO_2), and Volatile Organic The National Ambient Air Quality Compounds (VOC). Standards (NAAQS) and PSD Increment models demonstrated that facility-wide emissions of NO_{κ} and SO_{2} , including offsite sources and background data, are below the NAAQS and The Louisiana Department of PSD Increment standards. Environmental Quality (LDEQ) approved existing ambient monitors as a surrogate to additional monitoring for SO_2 and ozone; therefore, the CF Project does not require any post-construction pre-construction or additional To quantify the VOC ambient impact (ozone monitoring. formation) of the proposed project, the Alliance Refinery performed a Scheffe screening analysis for ozone that predicted compliance with ozone ambient standards.

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

NAAQS analysis was performed and compliance with both NO_x , and SO_2 was predicted. A Scheffe Screening analysis was also performed and showed compliance with the ozone impact from the project.

D. PSD INCREMENT ANALYSIS

Increment analysis predicted compliance for both NO_{κ} , and SO_2 standards (please note that no PSD Increment standard exists for ozone).

E. SOURCE RELATED GROWTH IMPACTS

The proposed project will not lead to a significant growth increase in Plaquemines Parish.

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F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

The proposed project will not impair visibility, soils, or vegetation in Plaquemines Parish.

G. CLASS I AREA IMPACTS

The Federal Land Manager (FLM) stated that the CF Project does not require any Class I area analyses (deposition, ozone, or visibility).

H. TOXIC IMPACT

The CF project increased potential LTAP emissions greater than the minimum emission rate (MER) for both Benzene and Sulfuric Acid. Refined modeling analysis for Benzene indicated that there is no impact on Ambient Air Standards (AAS) for Benzene. Previous modeling analysis for sulfuric acid indicated that there would not be any impact on the AAS for sulfuric acid due to the present project increase in sulfuric acid emissions.

V. CONCLUSION

The Office of Environmental Services, Permits Division, has made a preliminary determination to approve the completion of the Clean Fuel Project at the Alliance Refinery, Belle Chasse, Plaquemines Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

ALLIANCE REFINERY CONOCOPHILLIPS COMPANY AGENCY INTEREST NO. 2418 BELLE CHASSE, PLAQUEMINES PARISH, LOUISIANA PSD-LA-696

MAY 28, 2003

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled Preliminary Determination Summary dated May 28, 2003, and subject to the following emission limitations and other specific conditions. Specifications submitted are contained in the application and Emission Inventory Questionnaire (EIQ) dated February 3, 2003, as well as additional information dated February 5, 2003.

	MAXIMUM	ALLOWABLE	EMISSIONS	RATES	
Emission	Descriptio		NOx	VOC	SO ₂
Point No.	n				
294-H-1	Low Sulfur Gasoline	Lb/hr	4.60	0.62	3.10
!	Feed	TPY	20.17	2.72	13.56
	Heater No.	ppmv	0.04	_	-
294-H-2	Low Sulfur Gasoline	Lb/hr	3.63	0.49	0.03
	Reboiler	TPY	15.90	2.14	0.13
	No. 1	ppmv	0.04		
294-T-1 294-T-2	Storage Tanks	Lb/hr	-	2.12	_
294-T-3	Idiixo	TPY	-	9.29	
294-FF	Unit Fugitives	Lb/hr	_	7.74	_
		TPY	_	33.90	

- 2. The Feed Heater No. 1 and the Reboiler No. 1, Emission Points 294-H-1 and 294-H-2, shall comply with all the applicable provisions of NSPS, Subpart J Standards of Performance for Petroleum Refineries.
- 3. Permittee shall comply with all the applicable provisions of Louisiana MACT Determination for Refineries of July

SPECIFIC CONDITIONS

ALLIANCE REFINERY CONOCOPHILLIPS COMPANY AGENCY INTEREST NO. 2418 BELLE CHASSE, PLAQUEMINES PARISH, LOUISIANA PSD-LA-696 MAY 28, 2003

26, 1994 as BACT for Unit Fugitives, Emission Point 294-FF.

- 4. Permittee shall comply with all applicable requirements of NESHAP, 40 CFR 63, Subpart CC National Emission Standards for HAPs from Petroleum Refineries as BACT for Storage Tanks, Emission Points 294-T-1 thru 3.
- 5. Permittee with all applicable provisions of New Source Performance Standards, 40 CFR 60, Subpart Kb-Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984 as BACT for Storage Tanks, Emission Points 294-T-1 thru 3.

- This permit is issued on the basis of the emissions Τ. reported in the application for approval of emissions and in no way guarantees that the design scheme presented will be capable of controlling the emissions to the type and quantities stated. Failure to install, properly operate and/or maintain all proposed control measures and/or equipment as specified in the application and supplemental information shall be considered a violation of the permit and LAC 33:III.501. If the emissions are determined to be greater than those allowed by the permit (e.g. during the shakedown period for new or modified equipment) or if proposed control measures and/or equipment are not installed or do not perform according to design efficiency, an application to modify the permit must be submitted. All terms and conditions of this permit shall remain in effect unless and until revised by the permitting authority.
- II. The permittee is subject to all applicable provisions of the Louisiana Air Quality Regulations. Violation of the terms and conditions of the permit constitutes a violation of these regulations.
- III. The attached Annual Emission Rates listing and/or Emission Inventory Questionnaire sheets establish the emission limitations and are a part of the permit. Any operating limitations are noted in the Specific Conditions or, where included, Tables 2 and 3 of the Permit. The synopsis is based on the application and Emission Inventory Questionnaire dated May 13, 2002 and additional information dated February 3, 2003.
- IV. This permit shall become invalid, for the sources not constructed, if:
 - A. Construction is not commenced, or binding agreements or contractual obligations to undertake a program of construction of the project are not entered into, within two (2) years (18 months for PSD permits) after issuance of this permit, or;
 - B. If construction is discontinued for a period of two (2) years (18 months for PSD permits) or more.

The administrative authority may extend this time period upon a satisfactory showing that an extension is justified.

This provision does not apply to the time period between construction of the approved phases of a phased construction project. However, each phase must commence construction within two (2) years (18 months for PSD permits) of its projected and approved commencement date.

- V. The permittee shall submit semiannual reports of progress outlining the status of construction, noting any design changes, modifications or alterations in the construction schedule which have or may have an effect on the emission rates or ambient air quality levels. These reports shall continue to be submitted until such time as construction is certified as being complete. Furthermore, for any significant change in the design, prior approval shall be obtained from the Office of Environmental Services, Permits Division.
- VI. The permittee shall notify the Department of Environmental Quality, Office of Environmental Services, Permits Division within ten (10) calendar days from the date that construction is certified as complete and the estimated date of start-up of operation. The appropriate Regional Office shall also be so notified within the same time frame.
- VII. Any emissions testing performed for purposes of demonstrating compliance with the limitations set forth in paragraph III shall be conducted in accordance with the methods described in the Specific Conditions and, where included, Tables 1, 2, 3, and 4 of this permit. Any deviation from or modification of the methods used for testing shall have prior approval from the Office of Environmental Assessment, Environmental Technology Division.
- The emission testing described in paragraph VII VIII. above, or established in the specific conditions of this permit, shall be conducted within sixty (60) days after achieving normal production rate or after the end of the shakedown period, but in no event later than 180 days after initial start-up (or restart-up after modification). The Office of Environmental Assessment, Environmental Technology Division shall be notified at least (30) days prior to testing and shall be given the opportunity to conduct a pretest meeting and observe the emission testing. The test results shall be submitted to the Environmental Technology Division within sixty (60) days after the complete testing. As required by LAC 33:III.913, the permittee shall provide necessary sampling ports in stacks or ducts and such other

safe and proper sampling and testing facilities for proper determination of the emission limits.

- IX. The permittee shall, within 180 days after start-up and shakedown of each project or unit, report to the Office of Environmental Compliance, Surveillance Division any significant difference in operating emission rates as compared to those limitations specified in paragraph III. This report shall also include, but not be limited to, malfunctions and upsets. A permit modification shall be submitted, if necessary, as required in Condition I.
- X. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of at least five (5) years.
- XI. If for any reason the permittee does not comply with, or will not be able to comply with, the emission limitations specified in this permit, the permittee shall provide the Office of Environmental Compliance, Surveillance Division with a written report as specified below.
- A. A written report shall be submitted within 7 days of any emission in excess of permit requirements by an amount greater than the Reportable Quantity established for that pollutant in LAC 33.I.Chapter 39.
- B. A written report shall be submitted within 7 days of the initial occurrence of any emission in excess of permit requirements, regardless of the amount, where such emission occurs over a period of seven days or longer.
- C. A written report shall be submitted quarterly to address all emission limitation exceedances not included in paragraphs 1 or 2 above. The schedule for submittal of quarterly reports shall be no later than the dates specified below for any emission limitation exceedances occurring during the corresponding specified calendar quarter:
- 1. Report by June 30 to cover January through March
- 2. Report by September 30 to cover April through June
- 3. Report by December 31 to cover July through September
- 4. Report by March 31 to cover October through December
- D. Each report submitted in accordance with this condition shall contain the following information:
- Description of noncomplying emission(s);

- 2. Cause of noncompliance;
- Anticipated time the noncompliance is expected to continue, or if corrected, the duration of the period of noncompliance;
- 4. Steps taken by the permittee to reduce and eliminate the noncomplying emissions; and
- 5. Steps taken by the permittee to prevent recurrences of the noncomplying emissions.
- E. Any written report submitted in advance of the timeframes specified above, in accordance with an applicable regulation, may serve to meet the reporting requirements of this condition provided all information specified above is included. For Part 70 sources, reports submitted in accordance with Part 70 General Condition R shall serve to meet the requirements of this condition provided all specified information is included. Reporting under this condition does not relieve the permittee from the reporting requirements of any applicable regulation, including LAC 33.I.Chapter 39, LAC 33.III.Chapter 9, and LAC 33.III.5107.
- XII. Permittee shall allow the authorized officers and employees of the Department of Environmental Quality, at all reasonable times and upon presentation of identification, to:
 - A. Enter upon the permittee's premises where regulated facilities are located, regulated activities are conducted or where records required under this permit are kept;
 - B. Have access to and copy any records that are required to be kept under the terms and conditions of this permit, the Louisiana Air Quality Regulations, or the Act;
 - C. Inspect any facilities, equipment (including monitoring methods and an operation and maintenance inspection), or operations regulated under this permit; and
 - D. Sample or monitor, for the purpose of assuring compliance with this permit or as otherwise authorized by the Act or regulations adopted thereunder, any substances or parameters at any location.
- XIII. If samples are taken under Section XII.D. above, the officer or employee obtaining such samples shall give the owner, operator or agent in charge a receipt describing the sample obtained. If requested prior to leaving the premises, a portion

of each sample equal in volume or weight to the portion retained shall be given to the owner, operator or agent in charge. If an analysis is made of such samples, a copy of the analysis shall be furnished promptly to the owner, operator or agency in charge.

- XIV. The permittee shall allow authorized officers and employees of the Department of Environmental Quality, upon presentation of identification, to enter upon the permittee's premises to investigate potential or alleged violations of the Act or the rules and regulations adopted thereunder. In such investigations, the permittee shall be notified at the time entrance is requested of the nature of the suspected violation. Inspections under this subsection shall be limited to the aspects of alleged violations. However, this shall not in any way preclude prosecution of all violations found.
- XV. The permittee shall comply with the reporting requirements specified under LAC 33:III.919.E as well as notification requirements specified under LAC 33:III.927.
- XVI. In the event of any change in ownership of the source described in this permit, the permittee and the succeeding owner shall notify the Office of Environmental Services, Permits Division, within ninety (90) days after the event, to amend this permit.
- XVII. Very small emissions to the air resulting from routine operations, that are predictable, expected, periodic, and quantifiable and that are submitted by the permitted facility and approved by the Permits Division are considered authorized discharges. Approved activities are noted in the General Condition XVII Activities List of this permit. To be approved as an authorized discharge, these very small releases must:
 - 1. Generally be less than 5 TPY
 - Be less than the minimum emission rate (MER)
 - 3. Be scheduled daily, weekly, monthly, etc., or
 - 4. Be necessary prior to plant startup or after shutdown [line or compressor pressuring/depressuring for example]

These releases are not included in the permit totals because they are small and will have an insignificant impact on air quality. This general

condition does not authorize the maintenance of a nuisance, or a danger to public health and safety. The permitted facility must comply with all applicable requirements, including release reporting under LAC 33:I.3901.

XVIII. Provisions of this permit may be appealed in writing pursuant to La. R.S. 30:2024(A) within 30 days from receipt of the permit. Only those provisions specifically appealed will be suspended by a request for hearing, unless the secretary or the assistant secretary elects to suspend other provisions as well. Construction cannot proceed except as specifically approved by the secretary or assistant secretary. A request for hearing must be sent to the following:

Attention: Office of the Secretary, Legal

Section

La. Dept. of Environmental Quality Post Office Box 82282 Baton Rouge, Louisiana 70884-2282

XIX. Certain Part 70 general conditions may duplicate or conflict with state general conditions. To the extent that any Part 70 conditions conflict with state general conditions, then the Part 70 general conditions control. To the extent that any Part 70 general conditions duplicate any state general conditions, then such state and Part 70 provisions will be enforced as if there is only one condition rather than two conditions.

TABLE I BACT COST SUMMARY FOR NO,, VOC, AND SO_2

Control Alternatives	ternatives	Availability /	Negative	Control	Emissions	Annualized Cost	Average Cost	Increment
		Feasibility Impacts Efficiency	Impacts	Efficiency	Removed (tpy)	(\$)	Effectiveness	Effectiveness
			(e)	(% or ppmv)			(\$/Ton)	(\$/Ton)
Fugitives for Low								
Sulfur Gasoline								
Unit								
EPN 294-FF						•		
VOC Emissions								
	LDAR - LA MACT	Yes/Yes	None	1	1	:	1	1
	for Refineries							
Note:	a) Negative impacts: 1) economic, 2) environmental, 3)	ts: 1) economic	c, 2) environ	mental, 3)	 		 	
	energy, 4) safety						_	

TABLE I BACT COST SUMMARY FOR NO,, VOC, AND \mathtt{SO}_2

Control A	Control Alternatives	Availability / Feasibility	Negative Impacts (a)	Control Efficiency (% or ppmv)	Emissions Removed (tpy)	Annualized Cost (\$)	Average Cost Effectiveness (\$/Ton)	Increment Effectiveness (\$/Ton)
Low Sulfur Gasoline Feed Heater #1 EPN 294-H-1								
NO _x Emissions								
	SCONO,	Yes/No	1	2-3 ppmv	 		:	1
	SCR	Yes/No	1,2	%08	16.1	\$368,870	\$22,860	
	SNCR	Yes/No		20%	;	-	1	1
	ULNBs	Yes/Yes	None	0.04 lb/MM BTU	 	1		!
SO ₂ Emissions								
	Good Combustion Practices	Yes/Yes	None		 	1		
	Use of Low Sulfur Fuels	Yes/Yes	None	:	:	1		
VOC Emissions								
	Good Combustion Practices	Yes/Yes	None	1	-	1	1	
	Good Engineering Design	Yes/Yes	None	1	:	l	1	-
 			· · ·					
Note:	a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety	ls: 1) economik	c, 2) enviror	mental, 3)]] 		

TABLE I BACT COST SUMMARY FOR NOx, VOC, AND SO_2

Control Alternatives	ternatives	Availability / Feasibility	Negative Impacts (a)	Control Efficiency (% or ppmv)	Emissions Removed (tpy)	Annualized Cost (\$)	Average Cost Effectiveness (\$/Ton)	Increment Effectiveness (\$/Ton)
Low Sulfur Gasoline Reboiler #1 FPN 294-H-2								
NO _x Emissions								
	SCONO	Yes/No	-	2-3 ppmv	1	;		-
	SCR	Yes/No	1,2	%08	12.72	\$354,850	\$27.897	
	SNCR	Yes/No		20%	 	1		
	ULNBs	Yes/Yes	None	0.04 Ib/MM BTU	1		-	;
SO ₂ Emissions								
	Good Combustion Practices	Yes/Yes	None	1	I	1	-	1
	Use of Low Sulfur Fuels	Yes/Yes	None	1	1	. 1	ţ	ŧ
VOC Enissions								
	Good Combustion Practices	Yes/Yes	None	1	 	1	l	•
	Good Engineering Design	Yes/Yes	None	1	1	•	1	1
Note:	a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety	s: 1) economic	s, 2) environ	mental, 3)				

TABLE I BACT COST SUMMARY FOR NO_x, VOC, AND SO₂

Control Alternatives		Availability / P	Negative Impacts	Control Efficiency	Emissions Removed (tpy)	Emissions Annualized Cost (emoved (tpy) (\$)	Average Cost Effectiveness	Increment Effectiveness
			(a)	(% or ppmv)			(\$/Ton)	(\$/Ton)
Low Sulfur								
Tanks #1								
EPN 294-T-1,2,3	 						_	
VOC Emissions								
	External Floating Roof	Yes/Yes	None		ŧ	1	•	ţ
Note:	a) Negative impacts: 1) economic, 2) environmental, 3)	ts: 1) economic	c, 2) enviror	mental, 3)			 	
	energy, 4) safety							

TABLE 2: AIR QUALITY ANALYSIS
ALLIANCE REFINERY
CONOCOPHILLIPS COMPANY
AGENCY INTEREST NO. 2418
BELLE CHASSE, PLAQUEMINES PARISH, LOUISIANA
PSD-LA-696

Pollutant	Averaging Period	Pollutant Averaging Preliminary Sig Period Screening Mo Concentration Conc	Significant Monitoring Concentration	Current Monitoring Concentration	Level of Significant Impact	Maximum modeled Concentration	NAAQS (ug/m3)	Modeled PSD Increment Consumption	Allowable Class II PSD Increment
(1	(a65)	(28	(c) (f)n)	Ì	(cuilina)		(ug/m3)	(ng/ms)
Š	Annual	2.91	14	NR.	~	20.56	100	11.52	25
202	3-hour	68.50	1	NR	25	458.30	1,300	242.00	512
	24-hour	25.08	13	NR	5	169.13	365	88.70	91
, , , ,	Annual	1.10	1	N.R.	-	16.18	80	1.7	20
NR = NO	NR = Not required	7							

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AIR PERMIT ROUTING/APPROVAL SLIP



Al No.:	2418 Con	npany: Carr	ica Projeties	<u> </u>	(32666)
		opany: Coro CO PAILLIPS CA.		P V File N	ame: AR. 20005PS
		it No.: PS.		Rush:	Yes No
********	d Review Approved	Date Received	Date Forwarded	Com	
Permit V	••		5/28/03	P 500	
	the state of the s	 	7 . 4 7		A COUNTY
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Please Answer All of the Following					
1. Fee	Paid:	Yes No			
	C 33:I.1701 Information:	Yes No			
3. Gro	undwater Approval;	Yes 🗌 No	Date:		(Policy Memo 18)
	Toxics Support:	Yes 🔲 No	Date:		•
5. IT (Questions:	Yes 🔲 No	J	(Perm	it Manual, § 4.6, p.120)
6. Con	npliance Histories:	Yes 🔲 No			Water [
				+10/25 TPY TAPs, +50 TP	
7. App	olication Completeness Review:	Yes 🔲 No	Complete Date:		nt Date:
			~ ,	(LA	C 33.I.1503; Memo 41)
	lic Notice of Application:	Yes 🗌 No	_1		Data
	vspaper:	Yes No	7 AC 22.111 521	A; Policy Memos 36 & 38)	Date:
	lic Notice of Proposed Permit: vspaper:	res [] No	(LAC 33;111.331.	A; roncy memos 30 & 38)	Date:
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	C Reduction Plan:	Yes No	(LAC 33:III.2113	3 A 4)	. Dutc.
	5-9, if No, state reason here:	163 [] 1101		· · · · · · · · · · · · · · · · · · ·	
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11 AFF	ected Glycol Unit:	Yes 🔲 No	(LAC 33:111.2116	<i>S</i>)	
	npressor Testing:	Yes No			(Memo 28)
	ected Tanks: NSPS Subpart K	Ka 🔲 Kb	_		
	er NSPS Subparts:	LJ 1		• • • • • • • • • • • • • • • • • • • •	
	licable NESHAP Subparts:	Yes No	Part 61:		· · · · · · · · · · · · · · · · · · ·
Part				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	and/or NNSR Review:	Yes No	Pollutants	*************************************	
	temporaneous Netting:	Yes 🗍 No			
	posed Permit Sent to/Received by El			BBS 🗍	Email Mail
18. Basis for Decision (Memo 66): Yes Date: NA NA					
NA is not an acceptable answer to No. 3 – 10. If No, state the reason in the space provided.					